



# Educational Topic

## Materials Engineer

### Related Job Titles:

Metallurgical engineer, ceramics engineer

### Job Description:

A materials **engineer** develops and tests new types of metallic and non-metallic materials (**ceramics**, plastics, and composites) for use in **aerospace** systems and vehicles. When making a new material, **engineers** select materials with the structure and features needed for a given purpose. For example, they might develop lightweight, strong, heat-resistant materials for use in space. Most **engineers** work in laboratories. Some must travel to different work sites.

### Interests / Abilities:

- Are you good at math?
- Are you creative?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Are you good at working with a team?
- Do you express yourself well when speaking and writing?

### Suggested School Subjects / Courses:

- Mathematics
- **Physics**,
- **Chemistry**
- **Engineering** (materials)

### Education / Training Needed:

The minimum education required for this position is a **bachelor's degree** in materials **engineering** or a related subject from an accredited **college** or **university**. To do research, a **Ph.D.** is highly desired for this position.

### Areas of expertise:

- *Ceramics*: develop new ceramic materials
- *Metallurgy*: study and develop new metals by combining different metals

### Additional Resources:

- Order **NASA** career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE  
<http://core.nasa.gov>
- **Robotics Education**  
<http://robotics.arc.nasa.gov>
- **Junior Engineering Technical Society**  
<http://www.asee.org/jets>
- **Accreditation Board for Engineering and Technology, Inc.**  
<http://www.abet.org>
- **American Institute of Aeronautics and Astronautics**  
<http://www.aiaa.org>
- **Institute of Electrical and Electronics Engineers**  
<http://www.ieee.org>
- **Student Educational Employment Programs**  
[http://nasajobs.nasa.gov/stud\\_opps/employment/index.htm](http://nasajobs.nasa.gov/stud_opps/employment/index.htm)
- **NASA Jobs**  
<http://nasajobs.nasa.gov/>
- **NASA Summer High School Apprenticeship Research Program (SHARP)**  
<http://www.mtsibase.com/sharp/>

## What can I do right now?

- Participate in Bot-Ball or FIRST Robotics competitions (see Robotics Education <http://robotics.arc.nasa.gov>).
- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Participate in science fair projects.
- Visit Astro-Venture regularly to participate in chats and activities.  
<http://astroventure.arc.nasa.gov>
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit.  
(202) 783-7200
- Order activity books, poster sets and **engineering** kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.

- Please take a moment to evaluate this product at:
- [http://ehb2.gsfc.nasa.gov/edcats/educational\\_topic](http://ehb2.gsfc.nasa.gov/edcats/educational_topic)

- Your evaluation and suggestions are vital to continually improving NASA educational materials.
- Thank you.



<http://quest.nasa.gov/people/index.html>

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